AMENDMENTS TO THE CLAIMS

1. (Original) A calibration device for confirming or calibrating a biopolymeric array optical scanner, said device comprising:

a polymer layer comprising at least one fluorescent agent, wherein said device has minimal local and global nonuniformities **and is dimensioned for placement in an optical scanner**.

2. (Original) The device according to claim 1, wherein said at least one fluorescent agent is distributed substantially uniformly throughout said polymer.

3. (Original) The calibration device according to claim 1, wherein said polymer is selected from the group consisting of acrylates, epoxides, urethanes, polycarbonates, polyolefins, polyetherketones, polyesters, polystyrenes, polyethylstyrene, polysiloxanes, and copolymers thereof.

4. (Original) The calibration device according to claim 1, wherein said polymer is polymethyl-methacrylate.

5. (Original) The calibration device according to claim 1, wherein the thickness of said polymer layer ranges from about 0.25 micron to about 10 microns.

6. (Original) The calibration device according to claim 1, wherein the thickness of said polymer layer ranges from about 0.4 micron to about 1 micron.

7. (Original) The calibration device according to claim 1, wherein said device comprises a single polymer layer.

8. (Original) The calibration device according to claim 1, wherein said device comprises a plurality of polymer layers.

9. (Original) The calibration device according to claim 1, wherein said at least one fluorescent agent is present in said polymer in a final concentration ranging from about 1 ppm to about 5000 ppm.

10. (Original) The calibration device according to claim 1, wherein said at least one fluorescent agent absorbs and emits light in the portion of the electromagnetic spectrum to which a photomultiplier tube of said optical scanner is sensitive.

11. (Orignal) The calibration device according to claim 1, wherein said at least one fluorescent agent absorbs and emits light in the wavelength range selected from the group consisting of ultraviolet, visible and infrared.

12. (Original) The calibration device according to claim 1, wherein said global nonuniformity of said calibration device is less than about 5%.

13. (Original) The calibration device according to claim 1, wherein said local nonuniformity of said calibration device is less than about 5%.

Claims 14-15 (Canceled)

16. (Original) The calibration device according to claim 1, wherein said polymer layer comprises at least two fluorescent agents.

17. (Original) The calibration device according to claim 1, wherein said polymer layer is selected from the group consisting of a spin-coated polymer layer, a draw coated polymer layer, a roller coated polymer layer, an electrodeposited polymer layer and a sprayed polymer layer.

Claims 18 to 34. (Cancelled)

35. (Withdrawn) A method for calibrating a biopolymeric array optical scanning system, said method comprising:

(a) illuminating a surface of a calibration device with at least one light source at a plurality of focal depths, wherein said calibration device comprises a polymer layer comprising at least one fluorescent layer and wherein said illuminated surface is of sufficient proportion to enable acquisition of a consistent scan;

(b) obtaining fluorescence data from said; and

(c) calibrating the focus position of said optical scanning system based on said obtained fluorescence.

36. (Withdrawn) The method according to claim 35, wherein said focal position calibration comprises adjusting the distance between a scanning stage and a lens of said system.

37. (Withdrawn) A method for calibrating a biopolymeric array optical scanning system, said method comprising:

(a) illuminating a surface of a calibration device with at least one light source, wherein said calibration device comprises a polymer layer comprising at least one fluorescent layer;

(b) obtaining fluorescence data from said surface; and

(c) calibrating the dynamic focus of said optical scanning system based on said obtained fluorescence.

38. (Withdrawn) The method according to claim 37, wherein said dynamic focus calibration comprises adjusting the rate of speed at which an optical stage of said system travels.

39. (Withdrawn) The method according to claim 37, wherein said dynamic focus calibration comprises determining the amount of oscillation in an intensity image and adjusting the rate of speed at which an optical stage of said system travels according to said oscillation data.

40. (Withdrawn) A method for calibrating a biopolymeric array optical scanning system, said method comprising:

(a) illuminating a surface of a calibration device with at least one light source, wherein said calibration device comprises a polymer layer comprising at least one fluorescent layer;

(b) obtaining fluorescence data from said surface; and

(c) calibrating at least one scanner mirror of said optical scanning system based on said obtained fluorescence.

41. (Withdrawn) The method according to claim 40, wherein said at least one scanner mirror calibration comprises synchronizing the light beams of said system.

42. (Canceled)

43. (Withdrawn-Currently Amended) A method for calibrating a biopolymeric array optical scanning system, said method comprising:

(a) illuminating a surface of a calibration device with at least one light source, wherein said calibration device is ~~selected from the group consisting of~~ a calibration device according to claim 1 ~~and a calibration device according to claim 18, and~~;

(b) obtaining fluorescence data from said surface of said calibration device; and

(c) calibrating said optical scanning system based upon said fluorescence data.

44. (Withdrawn) The method according to claim 43, wherein said step of illuminating comprises illuminating said surface of said calibration device in the portion of the electromagnetic spectrum to which a photomultiplier tube of said optical scanner is sensitive.

45. (Withdrawn-Currently Amended) The ~~calibration device~~ **method**

according to claim 43, wherein said step of illuminating comprises illuminating said surface of said calibration device in the wavelength range selected from the group consisting of ultraviolet, visible and infrared.

46. (Withdrawn) The method according to claim 43, wherein said step of obtaining fluorescence data comprises detecting a signal related to the intensity of emitted light from said fluorescent agent.

47. (Withdrawn) The method according to claim 43, wherein said step of calibrating comprises calibrating the scale factor of said system.

48. (Withdrawn) The method of claim 47, wherein said scale factor calibration comprises adjusting the sensitivity of an optical detector of said system.

49. (Withdrawn) The method according to claim 43, wherein said step of calibrating comprises calibrating the focus position of said system.

50. (Withdrawn) The method according to claim 49, wherein said focus position calibration comprises adjusting the distance between a scanning stage and a lens of said system.

51. (Withdrawn) The method according to claim 43, wherein said step of calibrating comprises calibrating the dynamic focus of said system.

52. (Withdrawn) The method according to claim 51, wherein said dynamic focus calibration comprises adjusting the rate of speed at which an optical stage of said system travels.

53. (Withdrawn) The method according to claim 43, wherein said step of calibrating comprises determining the amount of oscillation in an intensity image and adjusting the rate of speed of said optical stage according to said oscillation data.

54. (Withdrawn) The method according to claim 43, wherein said step of calibrating comprises calibrating at least one scanner mirror of said system.

55. (Withdrawn) The method according to claim 54, wherein said at least one scanner mirror calibration comprises adjusting said at least one scanner mirror to synchronize the light beams of said system.

56. (Withdrawn) The method according to claim 43, further comprising the steps of subtracting a background signal from said obtained fluorescent data to obtain a background corrected value.

57. (Withdrawn) The method according to claim 43, wherein said fluorescent agent(s) is distributed substantially uniformly throughout said surface.

58. (Withdrawn) The method according to claim 43, further comprising the step of verifying the jitter of said optical scanning system.

59. (Withdrawn-Currently Amended) A method for performing a hybridization assay, said method comprising:

(a) calibrating an optical scanner with a calibration device, wherein said calibration device is ~~selected from the group consisting of~~ a calibration device according to claim 1 ~~and a calibration device according to claim 18~~,

(b) performing a hybridization assay with at least one array, and

(c) scanning said array with said calibrated optical scanner.

60. (Cancelled)

61. (Withdrawn) A method comprising forwarding data representing a result of a scan obtained by the method of claim 59.

62. (Withdrawn) The method according to claim 61, wherein said data is transmitted to a remote location.

63. (Withdrawn) A method comprising receiving data representing a result of an interrogation obtained by the method of claim 61.

64. (Withdrawn-Currently Amended) A method for manufacturing a calibration device, said method comprising spin-coating a composition onto a substrate to produce a calibration device ~~selected from the group consisting a calibration device~~ according to claim 1 ~~and a calibration device according to claim 18~~.

65. (Withdrawn) The method according to claim 61, further comprising photobleaching at least one region of said device.

66. (Withdrawn-Currently Amended) A kit for calibrating a biopolymeric array optical scanner, said kit comprising:

(a) at least one device ~~selected from the group consisting of a device~~ according to claim 1 ~~and claim 18~~; and

(b) a substrate comprising instruction for using said device to calibrate a biopolymeric array optical scanner.

67. (Withdrawn-Currently Amended) A kit for calibrating a biopolymeric array optical scanner, said kit comprising:

(a) at least one device ~~selected from the group consisting of devices~~ according to claim 1 ~~and claim 18~~; and

(b) an array.

68. (New) The device according to claim 1, wherein said polymer layer is present on a substrate having a length ranging from about 4 mm to 200 mm.

69. (New) The device according to claim 68, wherein said substrate has a length ranging from about 4 mm to 150 mm.

70. (New) The device according to claim 69, wherein said substrate has a length ranging from about 4 mm to 125 mm.

71. (New) The device according to claim 1, wherein said polymer layer is present on a substrate having a width ranging from about 4 mm to 200 mm.

72. (New) The device according to claim 71, wherein said substrate has a width ranging from about 4 mm to 120 mm.

73. (New) The device according to claim 72, wherein said substrate has a width ranging from about 4 mm to 80 mm.

74. (New) The device according to claim 1, wherein said polymer layer is present on a substrate having a thickness ranging from about 0.01mm to 5.0 mm.

75. (New) The device according to claim 74, wherein said substrate has a thickness ranging from about 0.1 mm to 2 mm.

76. (New) The device according to claim 75, wherein said subsrate has a thickness ranging from about 0.2 mm to 1 mm.

77. (New) A calibration device for confirming or calibrating a biopolymeric array optical scanner, said device comprising:

a polymer layer comprising at least one fluorescent agent, wherein said device has minimal local and global nonuniformities; and

a transparent substrate;

wherein said device is dimensioned for placement in an optical scanner.

78. (New) The calibration device according to claim 77, wherein said transparent substrate is glass.

79. (New) The calibration device according to claim 78, wherein said at

least one fluorescent agent is distributed substantially uniformly throughout said polymer.

80. (New) The calibration device according to claim 77, wherein the thickness of said polymer layer ranges from about 0.25 micron to about 10 microns.

81. (New) The calibration device according to claim 77, wherein said global nonuniformity of said calibration device is less than about 5%.

82. (New) The calibration device according to claim 77, wherein said local nonuniformity of said calibration device is less than about 5%.

83. (New) A calibration device for confirming or calibrating a biopolymeric array optical scanner, said device comprising:

a polymer layer comprising at least one fluorescent agent, wherein said device has minimal local and global nonuniformities; and

a substrate having a length ranging from about 4 mm to 200 mm, a width ranging from about 4 mm to 200 mm and a thickness ranging from about 0.01mm to 5.0 mm;

wherein said device is dimensioned for placement in an optical scanner.

84. (New) The calibration device according to claim 83, wherein said substrate is transparent.

85. (New) The calibration device according to claim 83, wherein said at least one fluorescent agent is distributed substantially uniformly throughout said polymer.

86. (New) The calibration device according to claim 83, wherein the thickness of said polymer layer ranges from about 0.25 micron to about 10 microns.

87. (New) The calibration device according to claim 83, wherein said global

nonuniformity of said calibration device is less than about 5%.

88. (New) The calibration device according to claim 83, wherein said local nonuniformity of said calibration device is less than about 5%.

89. (New) An optical scanner comprising a calibration device according to Claim 1.